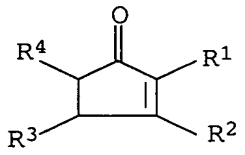
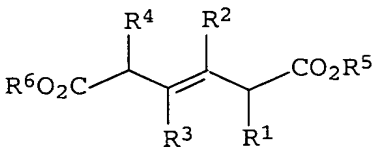
We claim:

1. A process for preparing 2-cyclopentenones of the general formula:



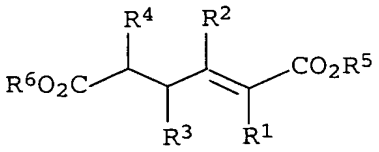
I

where R^1 to R^4 are each hydrogen atoms or are alkyl or alkenyl radicals having from 1 to 12 carbon atoms, cycloalkyl or cycloalkenyl radicals having from 5 to 7 carbon atoms, aralkylene or aryl radicals, by converting hexenedioic acids and/or their esters of the general formulae



II

or



III

where R^1 to R^4 are each as defined above and R^5 and R^6 are each hydrogen atoms or are alkyl radicals having from 1 to 12 carbon atoms, cycloalkyl radicals having 5 or 6 carbon atoms, aralkyl or aryl radicals, at temperatures of from 150 to 450°C, over solid, oxidic catalysts, wherein the catalysts on an oxidic support material comprise from 0.01 to 5% by weight of at least one alkali metal oxide.

2. A process as claimed in claim 1, wherein the support material used is a metal oxide of main groups II to V, transition groups I to VIII of the Periodic Table of the Elements, an oxide of the rare earth metals or a mixture thereof.

3. A process as claimed in claim 1, wherein the support material used is aluminum oxide and/or silicon oxide.

4. A process as claimed in claim 1, wherein sodium oxide and/or potassium oxide are used.

5. A process as claimed in claim 1, wherein the reaction is carried out in a fixed bed.

6. A process as claimed in claim 1, wherein the starting materials of the general formulae II and III are prepared by dimerizing acrylic esters.